

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-6, 12, and 45-77 are pending in the application, with claims 1-4, 45, 54, 64 and 74 being the independent claims. Claims 45, 48, 54-57, 59, 60, 61, 64, and 67-73 are sought to be amended by the present amendment. Claims 47, 58, and 65-66 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 7-11 and 13-44 were previously cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1-6, 12, and 74-77 are withdrawn from consideration.

Claims 45, 48, 54-57, 59, 60, 61, 64, and 67-73 are sought to be amended. Specifically, independent claims 45, 54, and 64 have been amended to recite that the CYK-4 protein is selected (or, for claim 64, the first CYK-4 protein and the second CYK-4 protein are selected) from the group consisting of human CYK-4 (SEQ ID NO:2); a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID NO:1; murine CYK-4 (SEQ ID NO:4); and a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID NO:3. Support for these amendments can be found in the specification, e.g., at page 20, lines 7-26; and at page 24, lines 7-16.

Independent claims 45, 54, and 64, and their dependent claims have also been amended to more clearly define the term "fragment." Claims 45 and 54 have been amended to replace "fragment thereof" with the phrase "fragment of the CYK-4 protein."

Independent claim 64 and its dependent claims 70-73 have been amended to replace "fragment thereof" with the phrase "fragment of the first CYK-4 protein" or, where appropriate, "fragment of the second CYK-4 protein." Dependent claim 61, which recites fragments of both CYK-4 and a MKLP1 protein subfamily member, has been amended to replace "fragment thereof" with either "fragment of the CYK-4 protein" or "fragment of the MKLP1 protein subfamily member," as appropriate. Support for these amendments can be found in the specification, e.g., at page 23, lines 20-28; at page 24, lines 7-16; at page 31, lines 13-24; and at page 32, line 7, to page 33, line 25.

Independent claims 45, 54, and 64 have also been amended to more clearly define Applicants' invention by deleting in the preamble of each claim the phrase "identifying a compound having" and replacing this phrase with "determining whether a compound has." In addition, at the end of each of claims 45, 54, and 64, in the clause referring back to the preamble, the phrase "identified as a compound" has been replaced with "determined to have." The adjective "test" has also been deleted from each of these claims. Support for these amendments can be found in the specification, e.g., at page 34, lines 21-28, in particular, lines 25-28.

Claim 55 has been amended to more clearly define Applicants' invention by adding the phrase "or fragment of the CYK-4 protein." Support for this amendment can be found in the specification, e.g., at page 31, lines 13-24.

Claims 60, 68 and 69, which recite a CYK-4 protein fragment, have been amended to recite a specific CYK-4 protein fragment, *i.e.*, a fragment comprising amino acid residues 1-120 of human CYK-4 (SEQ ID NO:2). Support for these amendments can be found in the specification, e.g., at page 32, line 7, to page 33, line 25.

Claim 56 has been amended to replace the database accession numbers following each of the two specific MKLP1 protein subfamily members recited in these claims by the corresponding SEQ ID number (SEQ ID NO:7 or SEQ ID NO:8). Claim 57 has been amended to insert SEQ ID NO:8 after "HsMKLP1."

Support for these amendments made to claims 56 and 57 can be found in Applicants' Amendment and Reply Under 37 C.F.R. § 1.114, filed on December 15, 2004, in which Applicants explained that SEQ ID NO: 7 and SEQ ID NO:8 represent the amino acid sequences of CeM03D4.1b and HsMKLP1, respectively, present as the cited GenBank accession numbers at the time of filing of the application. Support for SEQ ID NO:7 and SEQ ID NO:8 can be found in Exhibits 1 through 4, submitted by Applicants with the Amendment and Reply filed on December 15, 2004. Exhibits 1 and 2 represented printouts of the amino acid sequences of CeM03D4.1b and HsMKLP1 (SEQ ID NO: 7 and SEQ ID NO:8, respectively) as they existed in the GenBank database at the time of filing of the current application (June 18, 2001) and at the time of filing of the earliest priority application (EP 00 112 880.0, filed June 19, 2000), and Exhibits 3 and 4 represented printouts of the revision histories for the CeM03D4.1b and HsMKLP1 amino acid sequences in the GenBank database. Exhibits 1 through 4 were also cited and submitted in Applicants' First Supplemental Information Disclosure Statement filed on December 15, 2004.

Independent claim 54 has also been amended to more clearly define the term "interfere" by replacing this term with "inhibit." Support for this amendment can be found in the specification, e.g., at page 30, lines 8-18, and at page 6, lines 3-24.

Lastly, claims 48, 59, 60, and 67-69 have been amended to change their claim dependencies from claims cancelled by the present amendment (claims 47, 58, and 65-66) to claims that are now pending.

These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

I. Rejection under 35 U.S.C. § 112, First Paragraph

The Examiner rejects claims 45, 46, 51-57, 61-66 and 68-73 under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for a method for identifying a compound having the potential to inhibit cytokinesis employing a CYK-4 protein set forth in SEQ ID NOs 2, 4, or 6, allegedly does not reasonably provide enablement for a method for identifying a compound having the potential to inhibit cytokinesis employing any other CYK-4 protein. (Office Action, at paragraph IV(ii), pages 3-4.)

To expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claims 45, 54, and 64 to recite that the CYK-4 protein is selected (or, for claim 64, the first CYK-4 protein and the second CYK-4 protein are selected) from the group consisting of human CYK-4 (SEQ ID NO:2); a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID

NO:1; murine CYK-4 (SEQ ID NO:4); and a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID NO:3. Claims 46, 51-53, 55-57, 61-63, and 68-73, which depend from claims 45, 54 or 64, incorporate these amendments. Claims 65 and 66 are cancelled by the present amendment, thereby rendering moot the Examiner's rejection of these claims.

Applicants believe that the rejection of claims 45, 46, 51-57, 61-66 and 68-73 under 35 U.S.C. § 112, first paragraph, has been overcome and respectfully request that the Examiner reconsider and withdraw this rejection.

II. Rejections under 35 U.S.C. § 112, Second Paragraph

The Examiner rejects claims 45, 46, 51-64, and 68-73 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. (Office Action, at paragraph V, pages 4-6.)

Specifically, the Examiner asserts that 56 and 57 are indefinite because "the sequences of MKLP1 proteins are referred to a commercial database and such a database is subject to change and correction." (Office Action, paragraph V(i), lines 1-3, at page 4.) The Examiner then suggests inserting a sequence identifier, instead of a database accession number, after each recited MKLP1 protein subfamily member. (Office Action, paragraph V(i), lines 3-4, at page 4.)

To expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claims 56 and 57 to replace the database accession numbers

following the specific MKLP1 protein subfamily members recited in these claims by the corresponding SEQ ID number (SEQ ID NO:7 or SEQ ID NO:8), as suggested by the Examiner.

The Examiner also rejects claims 45, 46, 51-64, and 70-73 as allegedly indefinite because these claims "recite acronyms 'CYK-4' and 'MKLP1'," that "[s]uch a term is determined arbitrarily without a definitive structure," and that "both acronyms are not defined to refer a specific structure in the specification" (Office Action, paragraph V(ii), lines 1-3 and 17-18, at page 5.) The Examiner then suggests that Applicants should "indicate a protein by a sequence identifier and/or by spelling out the terms" (Office Action, paragraph V(ii), lines 5-7, at page 5.) Applicants respectfully traverse in part.

To expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claims 45, 54, and 64 to recite specific sequence identifiers for the CYK-4 protein, as suggested by the Examiner. Specifically, Applicants have amended these claims to recite that the CYK-4 protein is selected (or, for claim 64, the first CYK-4 protein and the second CYK-4 protein are selected) from the group consisting of human CYK-4 (SEQ ID NO:2); a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID NO:1; murine CYK-4 (SEQ ID NO:4); and a protein with an amino acid sequence encoded by a polynucleotide which hybridizes under stringent conditions to a polynucleotide having a nucleotide sequence as set forth in SEQ ID NO:3. Claims 46, 51-53, 55-57, 59-63, and 70-73, which depend from claims 45, 54 or 64, incorporate these amendments. Claims

58, 65 and 66 are cancelled by the present amendment, thereby rendering moot the Examiner's rejection of these claims.

With respect to the Examiner's comments regarding the term "MKLP1," Applicants submit that the term "MLKP1" does not render the claims indefinite because one of ordinary skill in the art could interpret the metes and bounds of the claims reciting this term. One of ordinary skill in the art would recognize that "MKLP1" is an acronym for "human mitotic kinesin-like protein 1," which is a member of the kinesin family of motor proteins. One of skill in the art would know that analysis of the conserved kinesin motor domain has been used to group members of the kinesin family proteins into subfamilies, one of which is the "MKLP1" subfamily, the members of which are known to those of skill in the art and which includes the representative MKLP1 protein. See, for example, Lee *et al.*, *Mol. Cell. Biol.* 15:7143-7151 (1995) (at page 7144, upper left column); Raich, W.B., *et al.*, *Mol. Biol. Cell* 9:2037-2049 (1998); Powers, J., *et al.*, *Curr. Biol.* 8:1133-1136 (1998); and Adams, R.R. *et al.*, *Genes & Development* 12:1483-1494 (1998) (previously cited and submitted as document nos. AR16, AS21, AT20, and AR1, respectively, in Applicants' Information Disclosure Statement filed on January 18, 2002). Thus, one of ordinary skill in the art would recognize the individual proteins represented by the "MKLP1 subfamily of proteins" and, as a consequence, could interpret the metes and bounds of a claim containing the term "MKLP1." Applicants therefore submit that use of the term "MKLP1" in the claims at issue does not render these claims indefinite.

However, to expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claims 56 and 57 to replace the database accession

numbers following the specific MKLP1 protein subfamily members recited in these claims by the corresponding SEQ ID number (SEQ ID NO:7 or SEQ ID NO:8), as suggested by the Examiner. Claim 58 is cancelled by the present amendment, thereby rendering moot the Examiner's rejection of this claim.

The Examiner further asserts that claims 60, 68, and 69 are allegedly indefinite because each claim recites "amino acid residues 1-120" and "[i]t is unclear which amino acids 1-120 are referred by the limitation." (Office Action, paragraph V(iii), at page 5.) The Examiner then suggests that a sequence identifier be added to overcome the rejection. (Office Action, paragraph V(iii), lines 2-4, at pages 5-6.)

To expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claims 60, 68 and 69 to add the specific sequence identifier SEQ ID NO:2. Thus, as presently amended, claims 60, 68 and 69 recite a specific CYK-4 protein fragment, *i.e.*, a fragment comprising amino acid residues 1-120 of human CYK-4 (SEQ ID NO:2).

Lastly, the Examiner asserts that claim 54 is allegedly indefinite because "it recites in the preamble and at the end of the claim recites the word 'interfere'," which "literally means either enhance or inhibit," but that, "[f]rom the specification, it is clear that only a compound that inhibits the function of CYK-4 protein has the potential to inhibit cytokinesis." (Office Action, paragraph V(iv), lines 1-4, at page 6.) The Examiner then suggests replacing the term "interfere" with the term "inhibit" to overcome the rejection. (Office Action, paragraph V(iv), lines 4-5, at page 6.) The Examiner also rejects claims 55-63 on the basis that these claims depend from claim 54, a rejected claim. (Office Action, paragraph V(iv), lines 5-6, at page 6.)

To expedite prosecution and without acquiescing in the propriety of the rejection, Applicants have amended claim 54 to replace the term "interfere" with the term "inhibit," as suggested by the Examiner. Claims 55-57 and 59-63, which depend either directly or indirectly from claim 54, incorporate this amendment as well. Claim 58 is cancelled by the present amendment, rendering moot the Examiner's rejection of this claim.

Applicants believe that the rejection of claims 45, 46, 51-64, and 68-73 under 35 U.S.C. § 112, second paragraph, has been overcome or rendered moot and respectfully request that the Examiner reconsider and withdraw the rejection.

III. Claim Objections

The Examiner objects to claims 48-50 and 67 as being dependent upon a rejected base claim, but as being allowable "if rewritten in independent form including all of the limitations of the base claim and any intervening claims." (Office Action, paragraph VI(i), at page 6.)

As described in sections *I* through *III* above, Applicants have amended claims 45 and 64, the base claims from which claims 48-50 and 67 depend, respectively. Applicants believe that the amendments made to claims 45 and 64 have overcome the Examiner's rejections of these claims, and, as a result, have overcome the Examiner's objections to claims 48-50 and 67.

The Examiner also objects to claims 45-47, 51-58, and 60-73 because they allegedly recite non-elected subject matter (murine CYK-4, or SEQ ID NO:4). (Office Action, at paragraph VI(ii), at page 6.)

Applicants thank the Examiner for clarifying the restriction requirement set forth in Paper No. 10 and for agreeing to examine all generic linking claims, including the search and examination of claims reciting murine SEQ ID NO:4 if a generic claim is allowed.

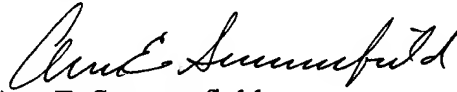
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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